

BP12011/BP12020/BP12030 UPS Bypass System

T.V.S.S. Filter
Optional Automatic Transfer Switch
Optional Dry Contact Status

User's Manual

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Please read and save this manual!

Thank you for selecting the Always “On” UPS Bypass Line Conditioner. It provides you with a high degree of protection for connected critical loads. This manual is a guide for Bypass System installation and use. It includes important safety instructions for correct operation and installation. Please read this manual in its entirety before setting up, installing and powering up the equipment. If you should encounter any problem, please refer to this manual before calling customer service.

This unit is designed as a Wrap-Around Bypass with manual or (optional) automatic transfer from UPS power to utility to allow for maintenance or repair of the UPS system without interruption of power to the load. When the system is in Bypass Mode, the unit incorporates an Always “On” TVSS Filter, which regulates and filters the utility power to the critical loads, ensuring cleaned power at all times.

OPTIONAL AUTOMATIC TRANSFER SWITCH WITH DRY CONTACT STATUS:

The intelligence built into the Bypass unit recognizes when the UPS is supplying power and, in the event that the UPS output power is lost and utility is still present, it will automatically switch to Bypass Mode and the communications will notify the connected equipment that they are no longer running off UPS power. This will allow the user to program a switch in equipment operation, or remote status, so in the unlikely event of a power outage while the system is in Bypass Mode, the connected loads can be prepared.

1. IMPORTANT SAFETY INSTRUCTIONS

- **WARNING (SAVE THESE INSTRUCTIONS):** This manual contains important instructions that should be followed during installation and maintenance.
- **WARNING (Controlled Environment):** Intended for installation in a controlled environment.
- **CAUTION:** Risk of electric shock; do not remove cover. No user serviceable parts inside. Refer servicing to qualified service personnel.
- **CAUTION:** Avoid exposure to direct sunlight, stoves or any other heat source.

- **CAUTION:** To prevent overheating, make sure the ventilation openings of the unit are not covered.
- **CAUTION:** Keep moisture and dust away.

2. INSTALLATION

2.1 Inspection: Inspect unit upon receipt. The packaging is recyclable.

2.2 Placement: Install in a controlled area with adequate airflow and free of excessive dust. Do not operate in an outdoor area.

2.3 Utility Power: Be sure the polarities and voltage match the rating of the unit. In addition, check that the loads being protected are within the capacity of the unit. If the capacity is not sufficient, the input circuit breaker will trip or fuse will open.

2.4 Connections and Startup:

1. Connect UPS Input and Output cables between Bypass module and AC Input and AC output receptacles located on rear panel of UPS (Do not turn UPS ON).
2. If UPS features Form "C" Dry Contact Communications, connect remote monitoring device to Dry Contact terminal block as required.
3. If UPS features an Automatic Transfer Switch, place Bypass Mode Select Switch to "Auto" position. If UPS features Manual Transfer Switch, place Bypass Mode Select Switch to "Bypass" position.
4. Plug Bypass Input AC power cord into utility AC supply.
 - "Bypass" and "Output" indicators will illuminate, indicating system Bypass Mode.
 - AC power will be present at UPS input. UPS will enter Standby Mode.
5. Turn UPS ON.
 - UPS will perform a start up sequence.
 - If UPS features an Automatic Transfer Switch, once power is available at the UPS output, the Bypass module Automatic Transfer Switch will switch to Normal Mode. "Bypass" indicator will go out; "Output" indicator will remain ON.
 - If UPS features a Manual Transfer Switch, once UPS has performed start up sequence, place switch to UPS/DISABLE mode and module will provide UPS power.
6. Connect loads sequentially to output receptacles of the Bypass System.
7. Place Mode Select Switch in position as required.

3. PRESENTATION

Figure 3.1: BP-12011-ATS-DCC

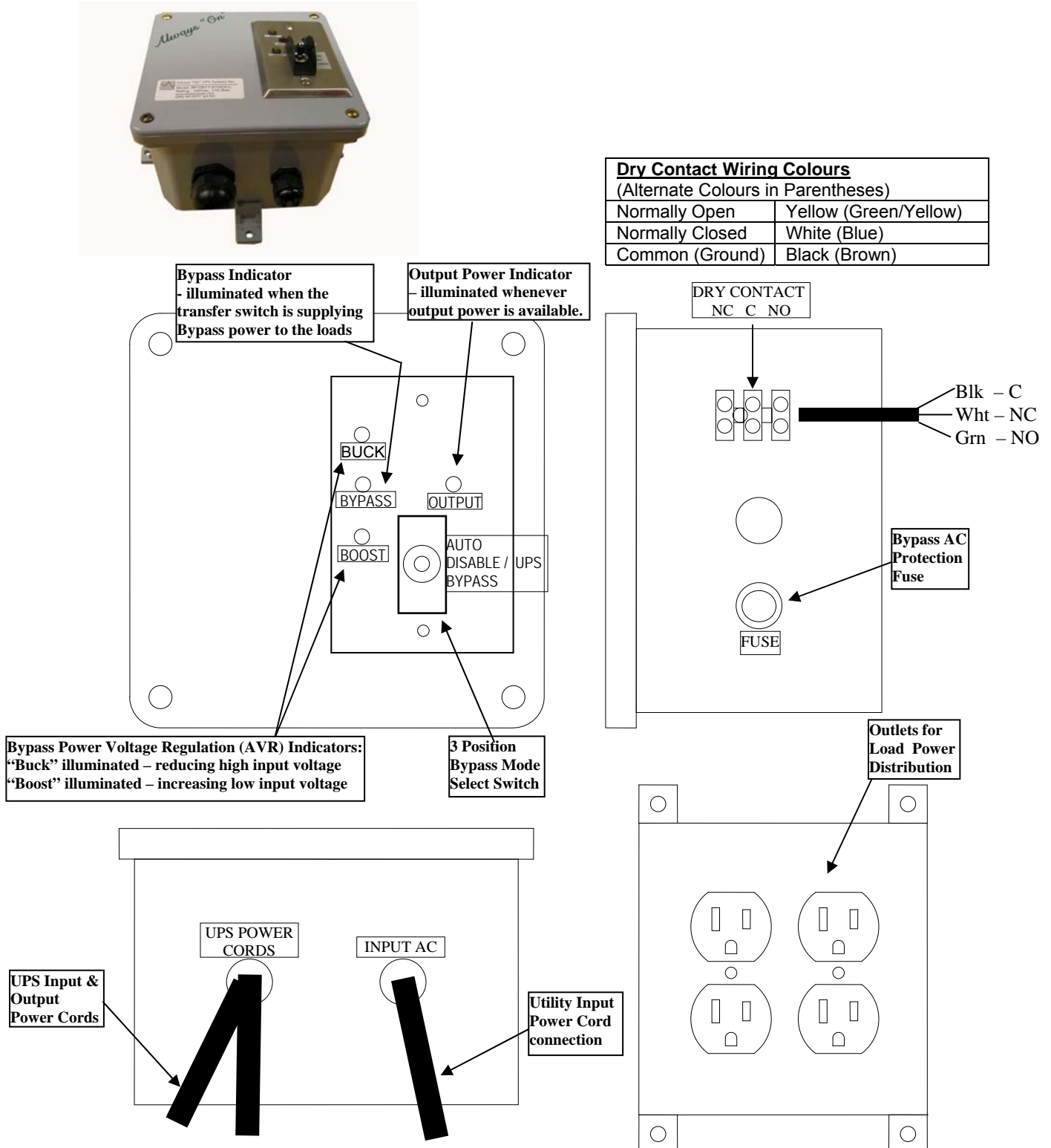


Figure 3.2: BP-12011 with Manual Transfer Switch

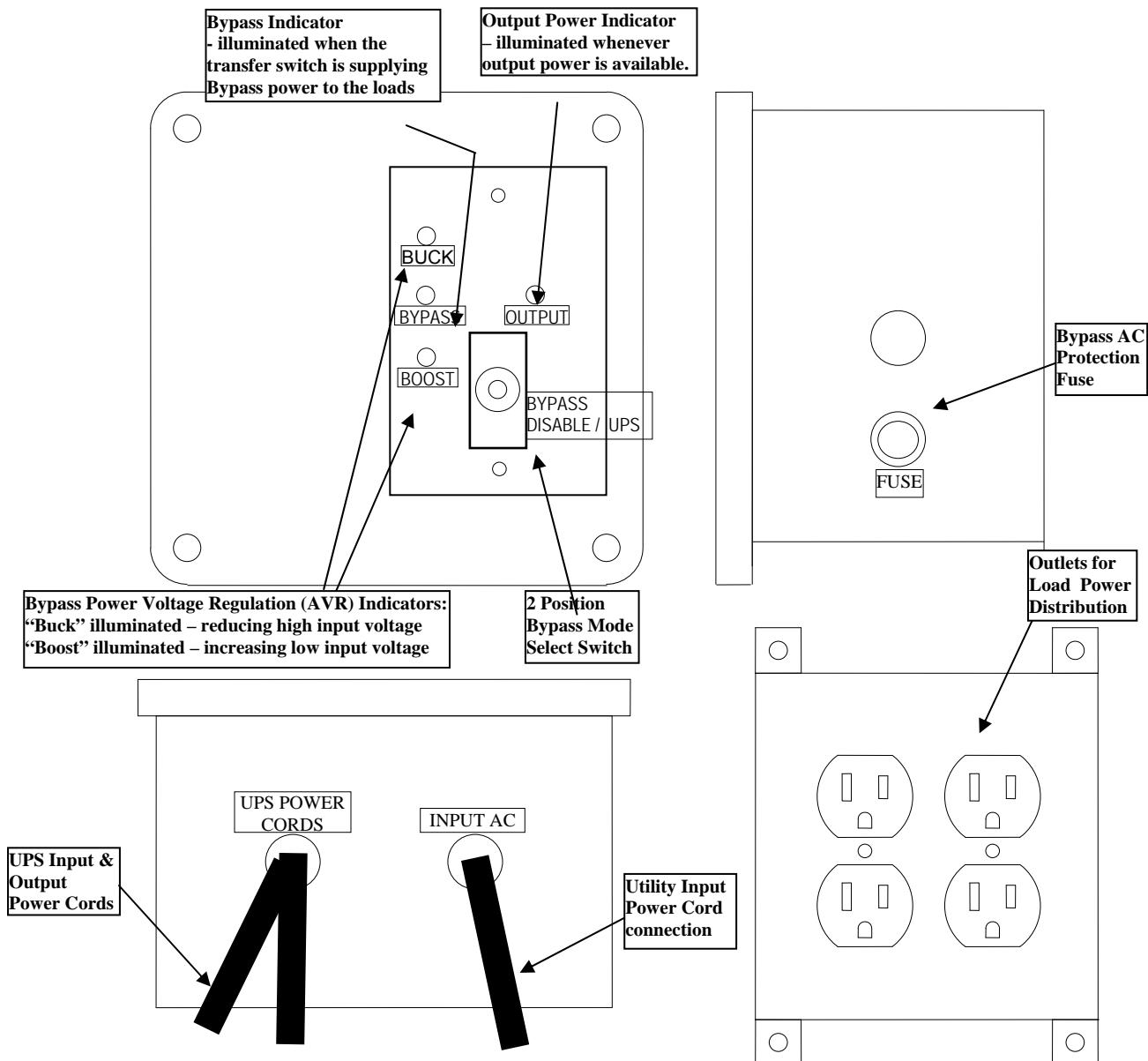


Figure 3.3: BP-12020-ATS-DCC / BP12030-ATS-DCC

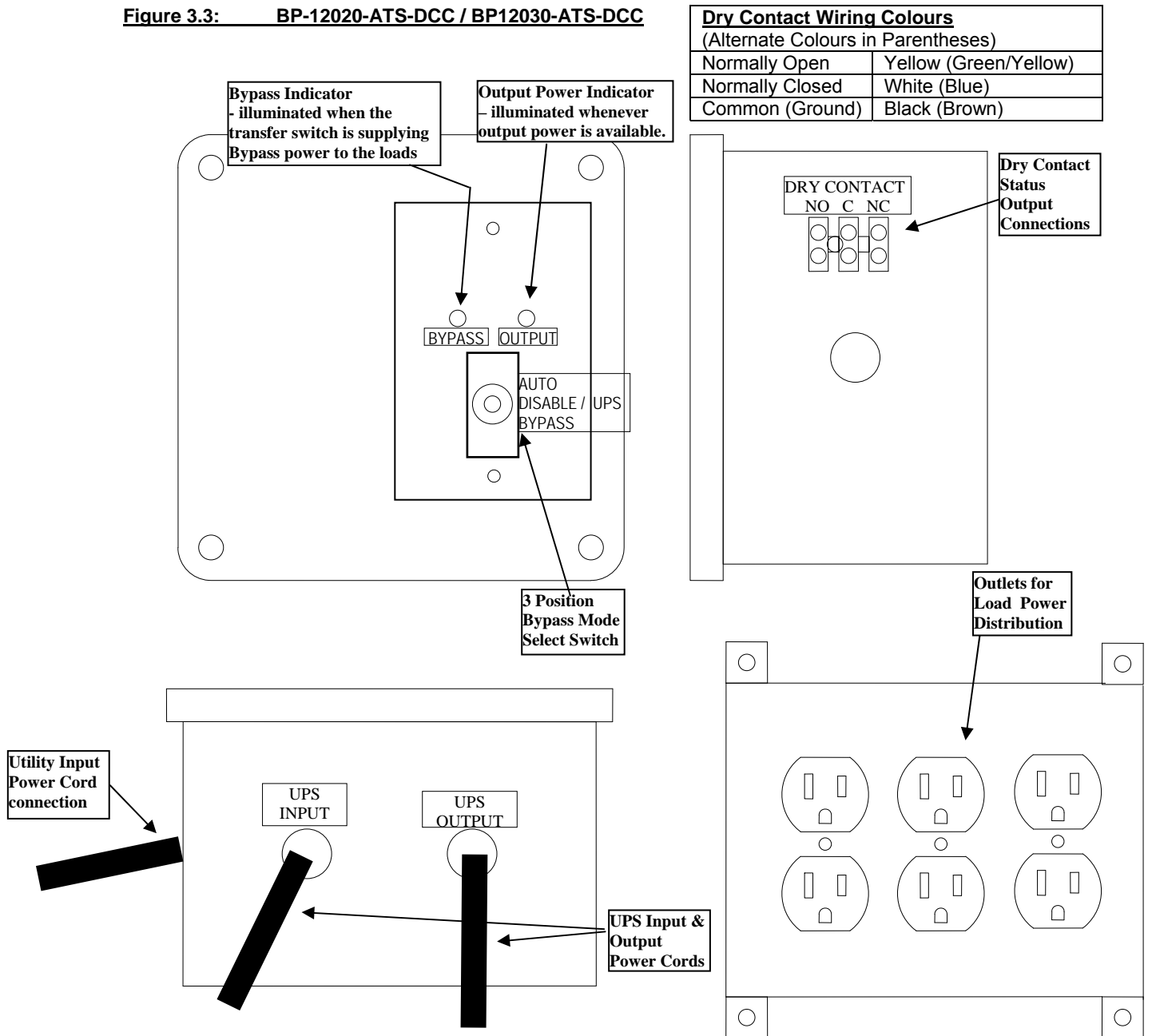
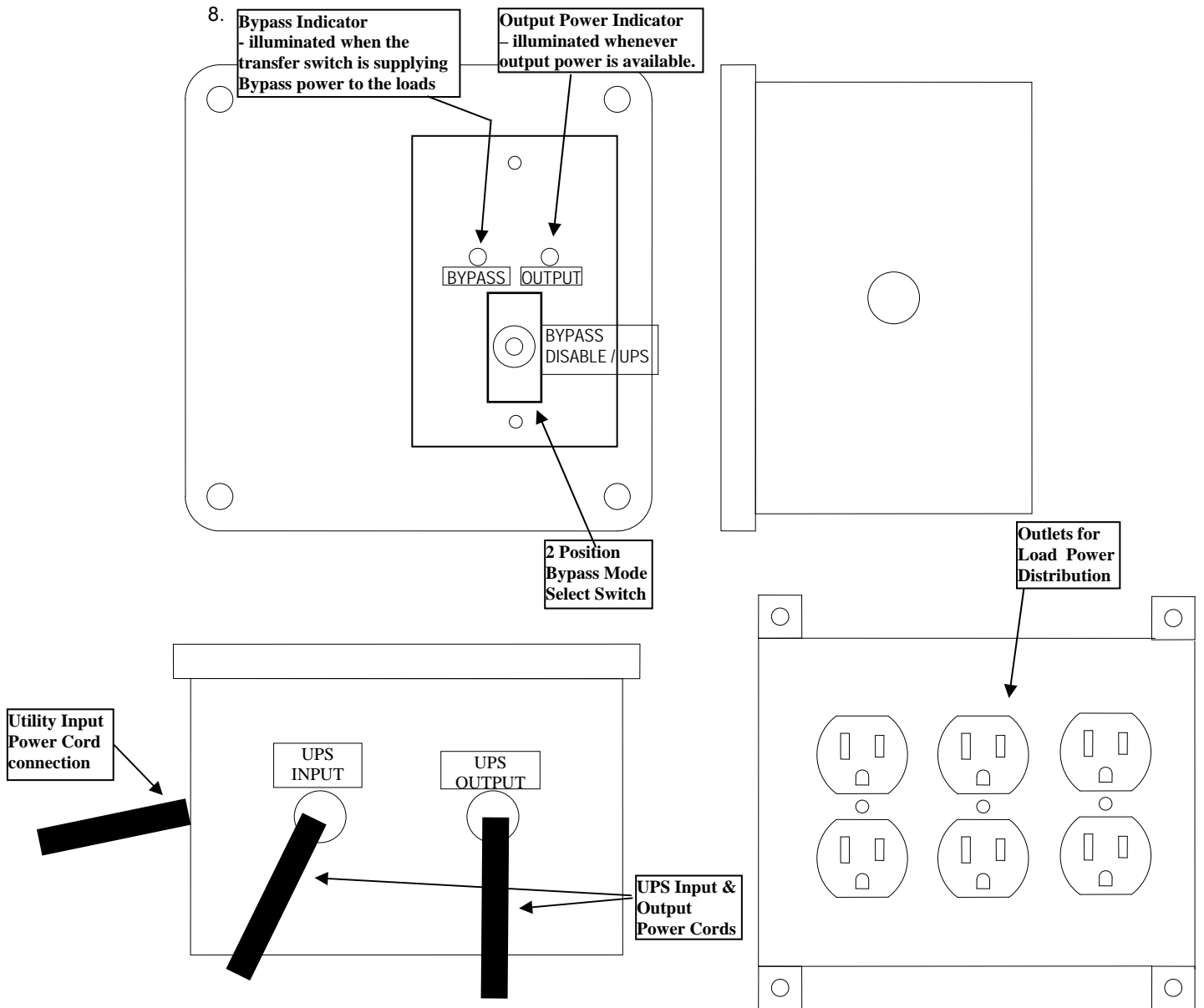
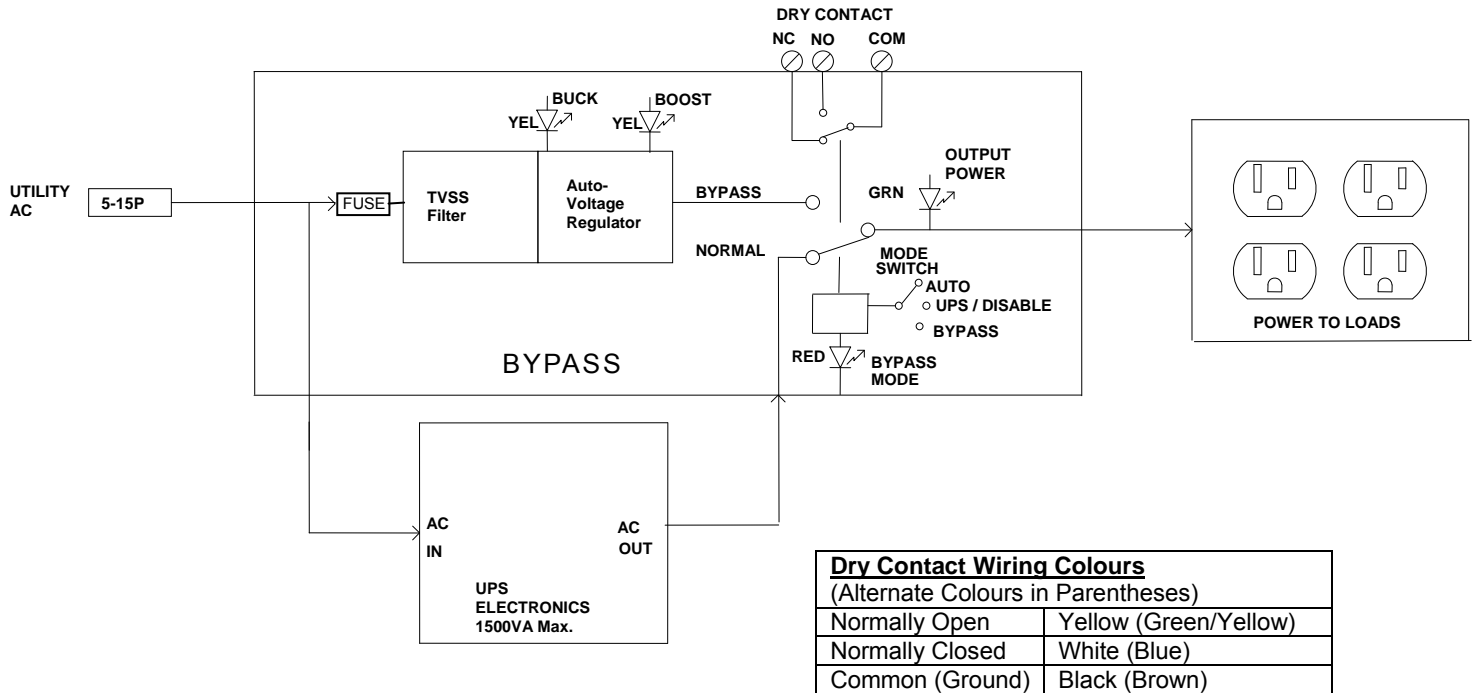


Figure 3.4: BP-12020 / BP-12030 with Manual Transfer Switch

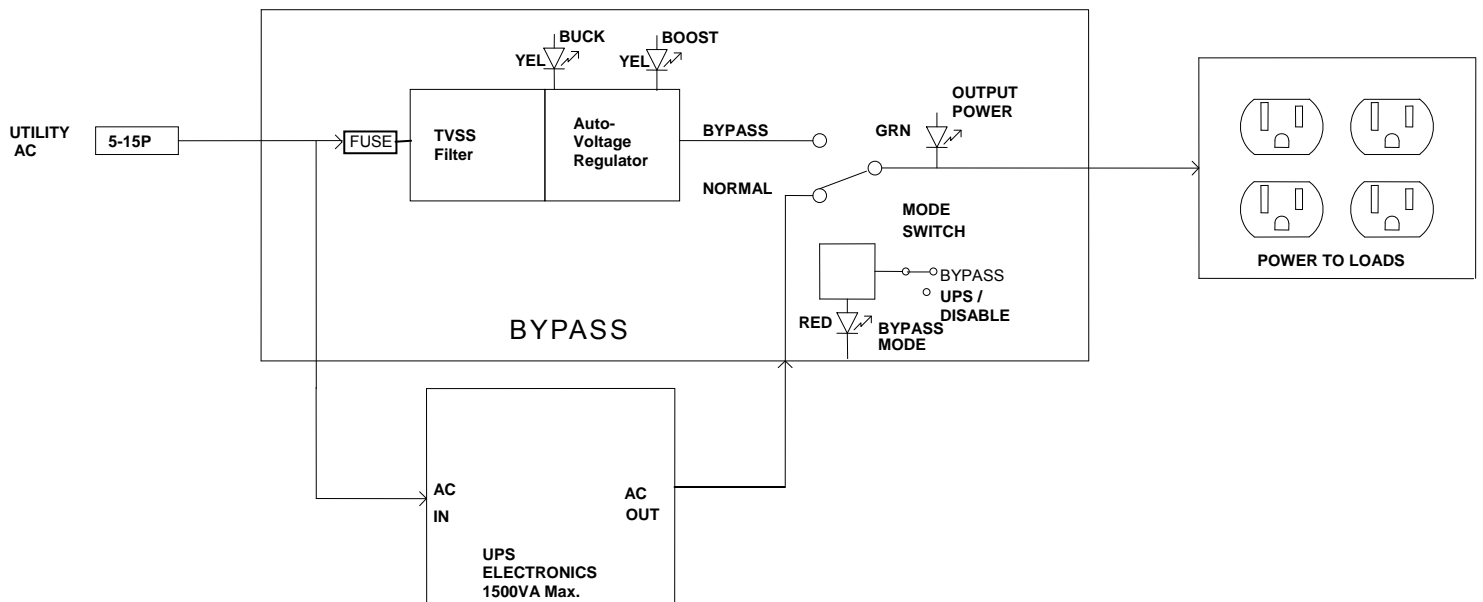


4. BLOCK DIAGRAMS

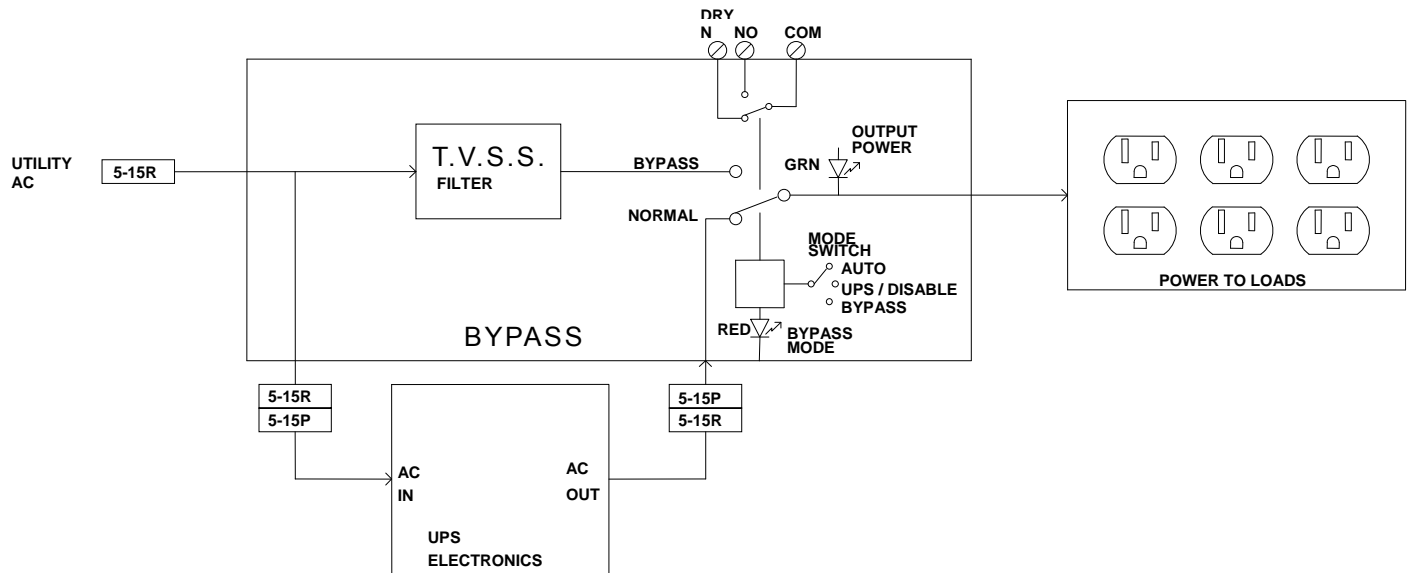
4.1 Block Diagram for BP12011-ATS-DCC:



4.2 Block Diagram for BP12011 (with Manual Transfer Switch):

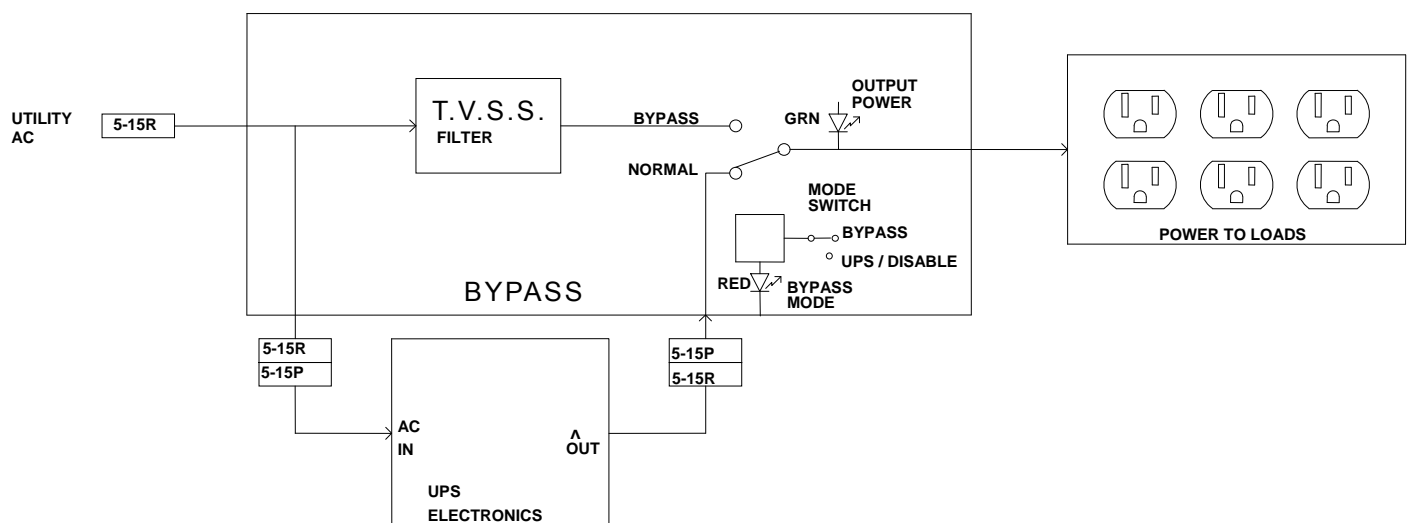


4.3 Block Diagram for BP12020-ATS-DCC:

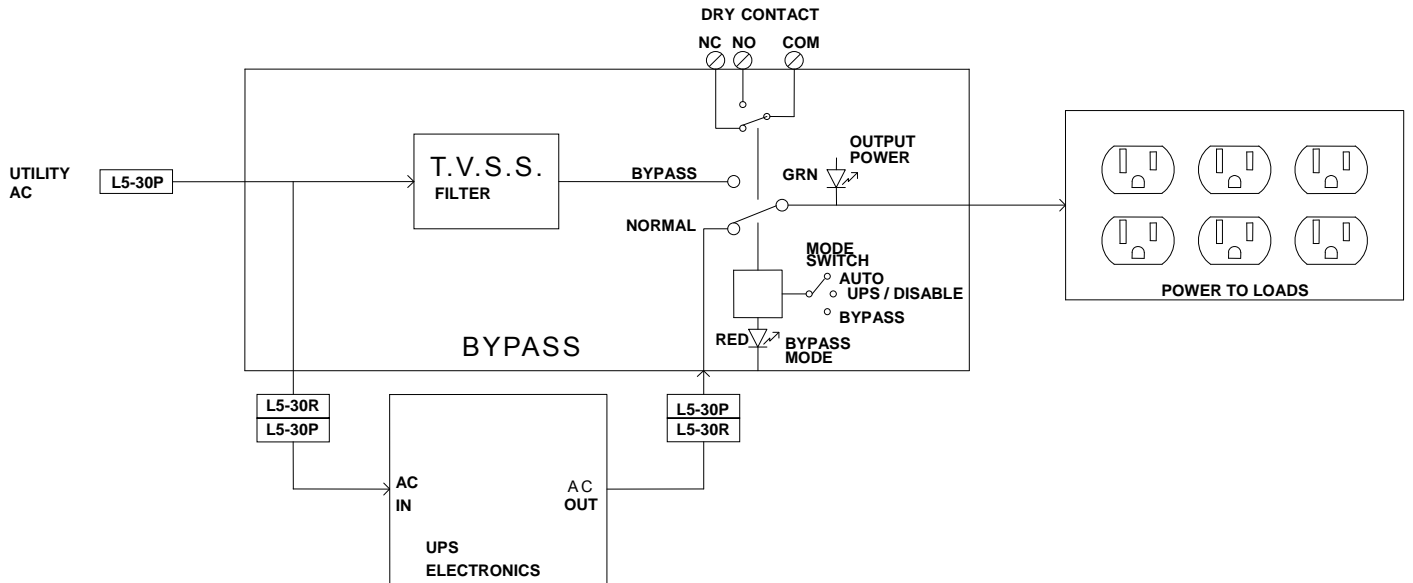


Dry Contact Wiring Colours	
(Alternate Colours in Parentheses)	
Normally Open	Yellow (Green/Yellow)
Normally Closed	White (Blue)
Common (Ground)	Black (Brown)

4.4 Block Diagram for BP12020 (with Manual Transfer Switch):

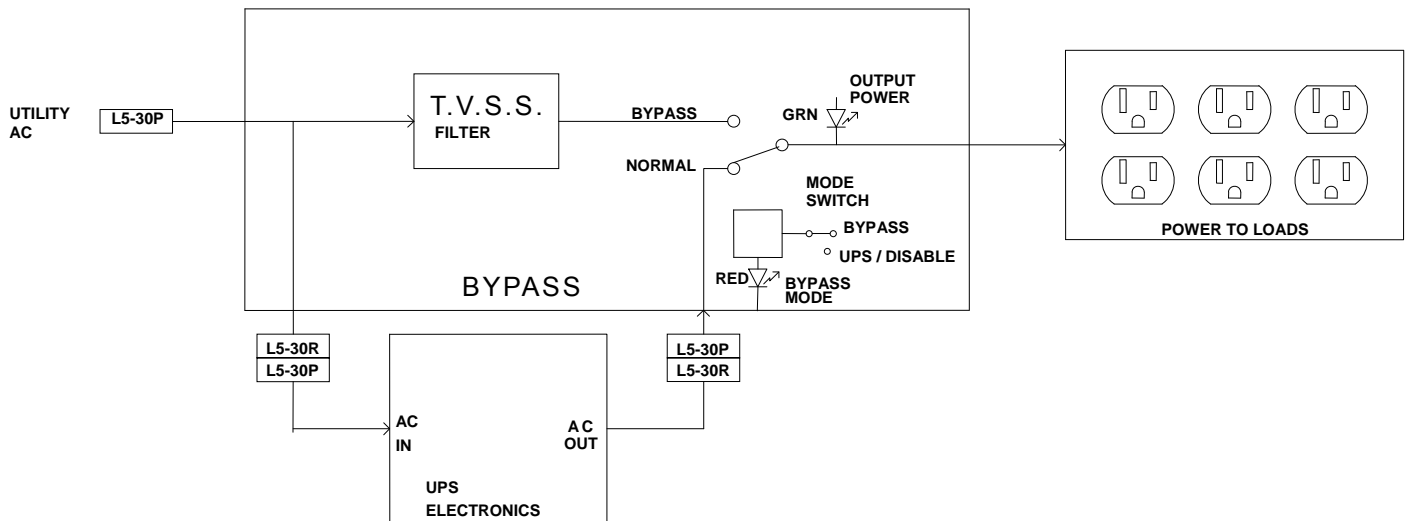


4.5 Block Diagram for BP12030-ATS-DCC:



Dry Contact Wiring Colours	
(Alternate Colours in Parentheses)	
Normally Open	Yellow (Green/Yellow)
Normally Closed	White (Blue)
Common (Ground)	Black (Brown)

4.6 Block Diagram for BP12030 (with Manual Transfer Switch):



5. OPERATION

For models featuring an Automatic Transfer Switch:

5.1 Mode Switch in “AUTO” Position:

This position provides an automatic transfer switch (ATS) between the UPS supplied power and the Bypass (or alternate) power. Priority for output power selection is given to the UPS source.

If the UPS power is removed (UPS turned OFF, UPS output unplugged, etc.), the ATS will switch to Bypass Mode automatically and maintain power to the load. The Bypass LED will illuminate. When UPS power is re-established, the ATS will automatically switch back to normal mode and supply UPS power to the loads. The Bypass LED will go out.

5.2 Mode Switch in “UPS” Position:

With the switch in this position, the automatic transfer is disabled and the switch is locked to only supply UPS power to the load. The UPS output is fed to the Bypass System load receptacles. The loads will lose power if the UPS power is removed.

5.3 Mode Switch in “BYPASS” Position

This causes a manual transfer to Bypass mode. UPS power is removed from the load and Bypass power is conditioned by the Always “On” TVSS filter, resulting in cleaned power that is applied to the load. The Bypass LED will be illuminated when in this mode.

This position relies on Bypass power to be available, and the switching action to Bypass mode is inhibited if Bypass power is not present at the transfer switch. If the Bypass LED is not illuminated when the Mode Switch is in this position, the transfer to Bypass has not occurred.

For models featuring a Manual Transfer Switch:

5.4 Mode Switch in “BYPASS” Position:

With the switch in the “BYPASS” position, unit is providing AC power directly from AC supply.

5.5 Mode Switch in “UPS/DISABLE” Position:

With the switch in the “UPS/DISABLE” position, unit is providing power from the output of the UPS.

5.6 Indicators:

Output LED – illuminated whenever output power is available to the load receptacles, in either UPS powered or Bypass modes.

Bypass LED – illuminated when the transfer switch is in the Bypass position and Bypass power is feeding the load receptacles.

For BP12011 11A models:

Buck LED – turns on when automatic voltage regulator (AVR) is reducing high input utility voltage for the Bypass switch.

Boost LED – turns on when automatic voltage regulator (AVR) is increasing low input utility voltage for the Bypass switch.

APPENDIX A. TROUBLESHOOTING

PROBLEM	POSSIBLE CAUSE	ACTION TO TAKE
Cannot be switched to Bypass Mode	Utility not available at input of bypass system	Confirm utility supply and connection
	Bypass AC fuse has opened	Replace fuse

APPENDIX B. SPECIFICATIONS

INPUT	Voltage Frequency	11A Model: 120VAC +/- 30% (80-150VAC) 20A or 30A Model: 120VAC nominal 50 or 60 Hz
OUTPUT	Voltage Capacity Frequency Number of outlets	11A Model: 120VAC +/- 10% (108-132VAC) 20A or 30A Model: 120VAC nominal 11A, 20A or 30A 50 or 60 Hz 4 [5-15R] (11A) or 6 [5-15R] (20A or 30A)
PROTECTION	Overload (Bypass Mode) [11A only] Short Circuit (Bypass Mode) [11A only] Transient Suppression	Fuse Fuse 150V Clamping Voltage 5700 Joules 20,000 Amps < 1 nano second response
OPTIONS	Automatic Transfer Switch Dry Contact Interface	Optional Optional Form "C" with ATS models

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CONTACT INFORMATION

Additional Purchases or Upgrades

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QA / Warranty Questions

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Software Questions

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